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of the point and a straight line, and in this part the reader is not assumed to have any knowledge of geometry beyond the fundamental properties of similar triangles and ratio. The teacher of elementary geometry will therefore find no trouble in reading this part, and he cannot fail to derive from such a reading many new points of view and a deeper sense of the richness of geometry and the beauty of geometric results.

The second part of the book, beginning with Chapter XI, page 130, is devoted to a study of conic sections. A few elementary theorems in geometrical conics are here assumed, as the author believes that time can be saved by getting a working knowledge of the elements of conic sections from the ordinary textbooks before the student is introduced to the theorems of Pascal, Brianchon, Desargues, and others. Figures are given with almost all the theorems and many full solutions are worked out in the text.

Very little use is made of projection and the principle of duality is avoided, as the author desired to exhibit the use of the theory of anharmonic ratio by the direct demonstration of correlative theorems. The book is provided with a somewhat full table of contents, and also with a good index. A number of blank pages for notes are found at the end of the volume. As a whole, the book can be regarded as a thoroughly good piece of work and one which should be in the hands of all teachers of elementary geometry.

G. A. Miller.

PROBLEMS AND QUESTIONS.

B. F. Finkel, Chairman of the Committee.

PROBLEMS FOR SOLUTION.

ALGEBRA.

383. Proposed by E. B. ESCOTT, Ann Arbor, Mich.

Find accurately to 6 decimals, $1.000000854^{1283451}$.

384. Proposed by H. C. FEEMSTER, York, Neb.

A man addressed n envelopes and wrote n checks in payment of n bills. Show that the number of ways of enclosing within each envelope one bill and one check in such a manner that in no instance all the enclosures shall be correct is

$$n!\left\{ n! - \frac{(n-1)!}{1!} + \frac{(n-2)!}{2!} - \cdots + (-1)^n \frac{0!}{n!} \right\},$$

taking $0! = 0$.

385. Proposed by J. F. LAWRENCE, Stillwater, Okla.

Show that, if p is prime and > 3, $(2p)! - 2(p)!(p)!$ is divisible by p^5.

386. Proposed by ELMER SCHUYLER, Brooklyn, N. Y.

Given the sequence, $\frac{1}{2}, \frac{1}{3}, \frac{2}{3}, \frac{1}{4}, \frac{3}{4}, \frac{1}{5}, \frac{2}{5}, \frac{3}{5}, \frac{4}{5}, \frac{1}{6}, \frac{5}{6}, \frac{1}{7}, \cdots, u_1, u_2, u_3, \cdots$.
Show that

$$\left.\frac{\sum_{1}^{n} u_i}{n}\right]_{n \doteq \infty} = \frac{1}{2}.$$